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ABSTRACT

Occupational stress is specific to the workplace and tends to be a global term used to describe stressors, the occupational conditions that cause difficulties for an individual, and strains, the conditions resulting from experiencing work stressors. While the effects of occupational stress on employees are well documented, this study further examined occupational stress with an emphasis on the possibility that social support from persons at work and/or at home may have a moderating effect on an employee's experience of stress. Subjects were employees of a medium-sized municipality in central Michigan. Subjects (N=181, out of a sample of 468) completed mailed questionnaires examining, among other things, life changes, job satisfaction, social support received, job stressors, depression, life satisfaction, and somatic complaints. Stressors examined (life stress, role conflict, role ambiguity, quantitative workload, skill utilization, work variability, and responsibility) explained 34% of the variance in outcome variables of job satisfaction, life satisfaction, somatic complaints, and depression. Twenty-four percent of the variance in outcome measures was explained by social support received from supervisors, coworkers and friends/family. Overall, it appeared than when role conflict was high, coworker support was important in employees' perceptions of job satisfaction and depression. Additional findings suggest that there might be reverse buffering among blue collar workers and "normal" buffering among white collar workers. (NB)

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The Job Stress-Social Support Buffering Hypothesis: Employees' Gender, Education, and Collar Color

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Stressors are "...environmental situations or events potentially capable of producing the state of stress? and strains are "...the symptoms or indices of stress" or what are sometimes referred to as the outcomes of experiencing stress (Greenhaus and Parasuraman, 1986, p. 38). Occupational stress is specific to the workplace and tends to be a global term used to describe stressors, the occupational conditions that cause difficulties for an individual, and strains, the conditions resulting from experiencing work stressors.

The effects of occupational stress on employees are well documented (e.g. Caplan, Cobb, French, Harrison, and Pinneau, 1975; Etzion, 1984; Gaster, Fusilier, and Mayes, 1986; Gore, 1978; House, 1981; Leavy, 1983; Rosch, 1984; and Sethi & Schuler, 1984) and include many possible physiological, psychological, and behavioral disorders that are purportedly strains experienced by the individuals (i.e. depression, job dissatisfaction, life dissatisfaction, headaches, heavy perspiration, upset stomach, tachycardia, insomnia, etc., see Seth and Schuler, page 85 for a list of disorders). It is generally thought that stress directly causes these individual conditions or disorders such as those previously mentioned or makes them more severe if caused by some other agent.

The purpose of the present study is to further examine the topic of occupational stress with emphasis on the possibility that social support from persons at work and/or at home may have a moderating effect on an employee's experience of stress.

Several studies and conceptual works have examined social support and its relationship with the stress experienced by people (e.g. Beehr, 1985; Caplan, et al., 1975; Ganster et al., 1986; Gore, 1978; House, 1981; Etzion, 1984; and, Leavy, 1983; Wells, 1984). According to House, social support can take the form of emotional support, appraisal support,

informational support, or instrumental support. Emotional support can take the form of esteem, affect, trust, concern, and listening. Appraisal support is exemplified by affirmation, feedback, and social comparison. Informational support is advice, suggestion, directives, and information. An finally, instrumental support is exemplified by the aid in kind, money, labor, time, and modifying environment.

The potential sources of social support are given thorough treatment by House (1981) as well. Nine potential sources of social support exist according to House's classification (see House, 1981, Table 2.2) and these are spouse or partner, other relatives, friends, neighbors, work supervisor, coworkers, service or care givers, "self-help" groups, and health/welfare professionals. If one focuses specifically on the work place, two major sources of social support emerge. Namely support from supervisor and from coworkers. But focusing specifically on stress in the workplace does not mean that other sources of support should be ignored. Support from family, friends, and other extraorganizational sources may be important and have been included in several studies which examined stress and social support in organizations (e.g. Caplan et al., 1975; Etzion, 1984; Ganster et al., 1986; Gore, 1978; Kaufmann & Beehr, 1989).

More than one viewpoint emerges from the literature concerning social support in alleviating some of the harmful effects of job stress. The first viewpoint is that social support functions as a buffer. According to this viewpoint, the more social support a person receives, the less impact job stressors will have on that person. The opposite is also thought to obtain. If a person bombarded by several stressors receives little or no social support, he or she will experience more of the disorders thought to accompany high levels of stress than

the person who has that "protective" social support system (e.g. see House, 1981; Gore, 1978; Leavy, 1983; Etzion, 1984; Cohen and Wills, 1985; Wells, 1984; and Beehr, 1985).

The second viewpoint revolves around the assertion that social support has main effects on outcomes and does not act as a buffer. In other words, possessing a social support network (people the individual can receive social support from) enhances an individual's well being directly and therefore does not influence health through promoting successful stress coping. This viewpoint asserts that receiving social support just makes one happier and healthier from the very beginning (e.g. see Ganster et al., 1986; House, 1981; Beehr, 1985).

One other viewpoint recently surfaced has surprised many researchers. Contrary to all of the prepositions and the evidence already presented with regard to the beneficial effects of social support, some studies have actually found what has been labeled "reverse buffering." Reverse buffering, as one might suspect, is the opposite of the "usual" buffering viewpoint discussed in this section. That is, people with high levels of stress are actually worse off with high levels of social support than they would be if they received no support at all. In a few studies, social support actually made the relationship between stressor sand strains strong (e.g. Beehr and Kaufmann, 1986, 1989; LaRocco, House, & French, 1980; Beehr, 1976; Blau, 1981).

In summary, the effect of social support on the experience of stress is still somewhat unclear at this time. It seems that the research conducted supports at lest a main effect hypothesis. It seems that the more research is conducted in this area, the more confused the issue becomes. However, the buffering hypothesis, viewpoint number one mentioned here, seems to provide a logical framework for research in this area, and has been labeled the

"dominant" social support hypothesis in the job stress research domain (Ganster et al., 1986).

Due to an inconsistency in the results of previous research that focused on the viewpoints mentioned earlier, Ganster, Fusilier, and Mayes (1986) examined the role of social support in lowering the effects of stressors on employees. They concluded that social support, particularly from one's supervisor, had a consistent relationship with the affective and somatic outcomes they examined.

Subjects for the Ganster et al. (1986) study were 326 employees of a large contracting firm. This represented approximately 80% of the employee population of the contracting firm. Data were collected from subjects at two different job sites and at the corporate headquarters. Eighty-four percent of the subjects were males and the average educational level was 14.4 years. The average age of the subjects was 32.5 years. The researchers state that approximately 60% of their subjects were employed in construction trade jobs while the rest of the sample occupied jobs such as accountant, engineer, secretary, and middle and upper level management positions. The subjects were recruited for participation in the study and responded to an 86 item questionnaire designed to assess social support, job stressors, and strains or outcome variables.

The researchers administered the questionnaire to groups of subjects in two parts. The task and role stressor scales and the social support scales were given to respondents and then several days later the subjects responded to the outcome measures. The questionnaires were administered to the subjects under the supervision of the researchers on site during working hours. The authors maintain that the response rate was high because the employees were allowed to fill out the questionnaire during working hours.

Ganster et al. (1986) examined the main effects of stressors on strains by obtaining various descriptive statistics and zero order correlations. In addition to this, a canonical correlation with redundancy analysis was performed to examine the percent of variance accounted for in the strain variables. A total of 13% of the variance in the strain measures was accounted for by the stressors. Main effects of social support on strains were also examined through the use of another canonical correlation. In this analysis it was determined that 6% of the variance in the strain variables was accounted for by social support.

The moderating or potential buffering effects of social support were also investigated. Four omnibus regressions were performed, one for each of the outcome variables, to examine the product terms, and thereby any possible significant interactions that would support the notion of a buffering effect. The researchers found no such significant interactions. However, when power was increased by performing several separate regressions where each of the outcome variables were regressed on each stressor, one at a time and all social support measures (28 regression in all), some significant interactions were found. For example, it was determined that lack of work variability and support from coworkers interact significantly in predicting life dissatisfaction. All of the interactions uncovered were of this "opposite" nature and hence provided no support for a positive buffering effect of social support.

In addition to the main analyses already discussed, the researchers performed some subsample analyses in order to investigate higher order interactions. The subgroups for the analyses were based on sex, education, and blue-collar versus white-collar position. Several significant interactions wee reported by the researchers.

However, Ganster et al. (1986) failed to find any significant differences in the role of

social support in the experience of stress between women and men. The researchers admit that the two groups differed slightly, but when three-way interactions were examined, no significant differences were found. However, the demographics of their sample may explain these results in part. As mentioned previously, their sample consisted of 326 employees of a contracting firm of which 84% were male. It could be argued then, that women were not adequately represented in this study, and that the sample characteristics (low variance of gender) might be somewhat responsible for the results obtained by the researchers.

Cohen and Wills (1985) state that the research they reviewed seems to indicate that some forms of social support may be effective for men but not for women and vice versa. The reasons proposed for these differences are that women may be more satisfied communicating with intimate friends about feelings, problems, etc., where men are more satisfied with companionship activities and instrumental task accomplishment. This then points to the assertion that the content of the social support received by, or at least preferred by, men and women differs due to their gender. The review also suggests that women may benefit less than men from social support networks because social relationships and activities reduced mortality caused by several different factors in men, but only reduced mortality due to heart disease in women (House, Robbins, & Metzner, 1982). House, et al. (1982) found the relationships between outcomes and social support for males to be consistently stronger than for women.

In Leavy's review of the literature regarding social support and psychological disorder (1983), he cites several studies which found that women tend to have more supportive relationships than men, and that women have more family support networks than men, among

other findings (see Leavy, page 14). Etzion (1984) also found differences between men and women in the effect of social support on the stress-burnout relationship. The researcher reported two significant three-way interactions, namely Work Stress X Work Support X Sex (accounted for 3.2% of the variance in Burnout). Women reported significantly more life stress and more burnout than men. As mentioned earlier, Ganster et al. (1986) failed to find such sex effects.

Due to the inconsistent previous research results regarding the social support buffering hypothesis, and the indication from previous research that males and females may differ in their experience of stress, the purpose of this study was to perform a partial replication of Ganster et al. (1986). Sample demographics differ from that study (especially by allowing for greater variance in gender) and the analyses examined the male-female differences, if any, more closely. Also, a measure of life stress was administered in addition to the measures used by Ganster et al. (1986), as there is some evidence that life change is an area where males and females differ in their experience of stress (Terborg, 1985). As in Ganster, et al., collar color and education were also examined for their potential effects on the social support buffering effect.

METHOD

Subjects

Subjects for the present study were employees of a medium-sized municipality located in the central part of Michigan. They received an "Organizational Stress Questionnaire" in their mail at home requesting voluntary participation. Only one mailing occurred, and no reminders were issued. The available sample consisted of 468. In total, 181 employees

responded. One hundred fourteen of the employees were males, and 64 were females (with this variable missing for three cases). Seventy percent of the subjects were married, 91% were caucasian, and the average age of the subjects was 40.5 years. About 46% had a high school diploma, and 49% had more education than that. Subjects occupied about 50 different positions with the municipality.

Measures

Measures were the same as those used by Ganster et al. (1986) with two exceptions, one being the addition of questions measuring life changes, and the other being the addition of more items designed to measure job satisfaction. First, a section composed of items from the Life Experiences Survey was added to the questionnaire (Sarason, Johnson, & Siegel, 1978). This section of the questionnaire determined whether or not a person had experienced any of several life events during the past year and asked the subject to indicate what kind of impact he event had on him or her. The subjects used an 8-point response scale ranging from Extremely Negative (-3) to Extremely Positive (+3) and Did Not Experience (9). In the present instrument, items 19, 20, 30, 40, 41, 45, and 53 were work-related items and combined to form a work-related life stress index. Items on the Sarason, et al. instrument which pertained to students were not included in the present instrument leaving a total of 60 items. Fourteen items from Hackman and Oldham's Job Diagnostic Survey (1980) and 3 items from the Caplan et al. Workload Satisfaction Scale (1975) were added to the job satisfaction section to avoid using the one-item measure of Ganster et al. (1986).

Social support from supervisor, coworkers, and spouse, friends, and relatives was measured by four 5-pint Likert-scaled items obtained from Caplan et al., (1975). An

example of these items is: "How much can each of these people be relied on when things get tough at work?" Subjects responded to these items in terms of their immediate supervisor; their coworkers; and their spouse, friends, and relatives, with a five-point response scale.

Six job stressors were assessed, namely, role conflict, role ambiguity, quantitative workload, work variability, skill utilization, and responsibility for others. Role conflict and ambiguity were measured by the indices of Rizzo, House, and Lirtzman (1970). the remaining four job stressors were measured using indices obtained from Caplan et al., (1975). Quantitative workload, which indicates the amount of work a person does on the job, was measured using 11 items. An example of these items is: "How often does you job require you to work very hard?" These questions used 5-point response scales. Work variability was measured with 3 items and indicates whether or not a person's workload remains at a constant level or varies from high to low levels. An example of these items is: "How often is there a marked increase in how fast you have to think?" Again, a 5-point response scale was used. Skill utilization is indicative of whether or not a person uses his or her skills on the job, and this was measured with 3 items using a 5-point response scale. Skill utilization is indicative of whether or not a person uses his or her skills on the job, and this was measured with 3 items using a 5-point response scale. An example of one of these items is: "How often can you use the skills from your previous experience and training?" Responsibility for others was measured with 4 items and refers to the amount of responsibility a person has for the welfare and future of others. An example item is: "How much responsibility do you have for the future of others?" All of these items ere measured on five-point response scales

Four outcome variables were assessed. These variables were depression, job satisfaction, life satisfaction, and somatic complaints. Depression was assessed using 10 items from Caplan et al., (1975), an example of which is "I feel down-hearted and blue." These items have a 4-point response scale ranging from Almost Never (1) to Almost Always (4). Job satisfaction was measured using 17 items (Hackman and Oldham, 1980; Caplan et al., 1975) and a sexless form of the "faces" scale (Kunin, 1955). Subjects responded to items such as: "The amount of challenge in my jog," and "The amount of job security I have," using a 7-point response scale ranging from Extremely Dissatisfied (1) to Extremely Satisfied (7). Life satisfaction was measured with items from the Quinn and Shepard scale (1974). These two items are: "Taking all things together, how would you say things are these days?" and "In general, how satisfying do you find the ways you're spending your life these days?" Subjects checked one of the following responses for the first question: Very Happy, Pretty Happy, Not Too Happy, Very Unhappy, and one of the following responses for the latter question: Completely Satisfying, Pretty Satisfying, Not Very Satisfying, Very Dissatisfying. Somatic complaints were assessed with 17 items that prompted the subjects to respond in terms of how often they had experienced the conditions in the past month (Caplan et al., 1975). Examples of the items are: "Your mouth became dry." and "You were bothered by a headache," using a 5-point response scale ranging from Never (1) to Very Often (5). More details on the questionnaire can be found in Ganster, et al. (1986).

Procedure

The present study was facilitated by the Employee Assistance Program (EAP) of the Municipality examined. It was thought that employees would be more apt to respond to the

questionnaire if the research would in some way be used to benefit them through their EAP. The questionnaire was mailed to the homes of the subjects who were asked to return the questionnaire within approximately two weeks of receipt. Mailing labels were generated by the Data Processing Department of the Municipality. Return envelopes and postage were supplied. The EAP's address was used as the return address on the envelopes.

A code number was placed on each questionnaire so that the author could keep track of who was or was not returning the questionnaires, and hence, to determine if any detectable pattern emerged. Also, by dong this the author could supply missing biographical information such as job title, or age, which were missing on several of the questionnaires, by utilizing the information available in the Personnel Department's files. Due to the presence of the code numbers, the respondents were not guaranteed anonymity but were guaranteed that their responses would be kept confidential. Temporal separation of administration of different parts of the questionnaire did not occur as it did in Ganster et al. (1986), due to time constraints and other related constraints on data collection.

RESULTS

Means, standard deviations, reliabilities and correlations among variables appear in Table 1. The measures have acceptable reliabilities (.74 to .91). Also, the zero-order correlations reveal some significant relationships between the stressors, the sources of social support, and the strains.

Main Effects of Stressors on Strains

Following the logic of Ganster et al. (1986), a canonical correlation with redundancy analysis was computed to determine if a main effect of the stressors on the strains could be

established. (See Table 2). Essentially, canonical correlation indicates the relationship of the two sets of variables in question while taking into account the variance shared within the variable sets (see Cohen and Cohen, 1983 for a complete explanation of canonical correlation).

Two of the four canonical variates were significant. According to the redundancy indices, 34% of the redundancy indices, 34% of that variance in the strain measures can be explained by the stressors and therefore, this provides evidence for an overall main effect of stressors on strains.

Main Effects of Social Support on Strains

Another canonical correlation was used to assess the relationship between the social support variables and the strains (Table 3). Two of the four canonical variates were also significant. According to the redundancy indices, 24% of the variance in the strains is explained by the social supports. This finding presents evidence for an overall main effect of social supports on strains.

Moderating Effect of Social Support

Following Ganster et al.'s (1986) analytical mode, four omnibus hierarchical multiple regressions were computed to determine if any of the interaction terms contributed significantly to explaining the variance in any of the strain measures (see Cohen and cohen, 1983 for information on Multiple Regression). This is a low power option because considerable degrees of freedom are consumed. First, all stressors are entered into the regression equation (life stress, role conflict, role ambiguity, quantitative workload, work variability, skill utilization, responsibility and work-related life stress). Next, all social

supports are entered at the second step (supervisor support, coworker support and support from family/friends). Finally, all interaction terms are entered at the third step. This process consumes a total of 35 degrees of freedom. Despite the significance of the overall R's at the third step of the equation where the interactions were introduced, the set of interactions themselves did not significantly account for variance in the outcome variables. This result is consistent with the findings of Ganster et al. (1986).

As in Ganster et al. (1986), a higher power alternative approach was taken as well. In this case, 32 separate regressions were performed in which each strain was regressed on each stressor plus all three social supports and then all applicable interaction terms. All of the results that follow use Fisher's Protected T-test to determine the significance of individual interactions entered with others in set form. When a particular set was significant, the individual components (interactions) were examined to determine which interaction in the set was responsible for the explained variance in the criterion variable. All F values reported in connection with significant interaction terms are squared Protected T's.

Interaction terms were significant for the moderated regression analyses of two of the four strains: depression ($F = 9.80$; $df = 1,173$; $p < .05$) and job satisfaction ($F = 3.96$; $df = 1,173$; $p < .05$) For both of these strains, role conflict and coworker support formed the significant job stressor-social support interaction. Tables 5 and 6 contain these results and Figures 1 and 2 illustrate the interactions.

Figures 1 and 2 were constructed using the formula Y-B1X1 + B2X2 + B3X1X2 + A, where B1 is the B weight for the stressor, B2 is the B weight for the social support, B3 is the B weight for the significant interaction and A is the value of their constant or intercept.

The values of the significant interaction, as indicated by a significant B, were used to calculate Y. In keeping with Ganster et al. (1986), the values 2 and 4 were substituted into the equations for low and high levels of social support respectively, to arrive at the final equations for each of the regression lines.

As is evidence from Figure 2, the effect of role conflict on job satisfaction is less severe for individuals with high levels of coworker support than it is for individuals with low support. Role conflict is less positively related to depression for individuals receiving high levels of coworker support than for individuals receiving low levels of support (Figure 1).

Similar to these findings, Ganster et al. (1986) found no significant interactions that explained variance in somatic complaints. In contrast to the present findings, however, Gaster et al. (1986) found that variance in life dissatisfaction could be explained both by the interaction of coworker support and lack of variability, and the interaction of coworker support and skill underutilization. Ganster et al. found these interactions indicated reverse or opposite buffering. Further, the previous researchers could not explain any of the variance in depression with the interaction terms. When the previous study explained variance in job satisfaction, it was through the interactions of lack of variability and supervisor support (also opposite buffering), as well as lack of variability and support from family/friends (buffering in the expected direction). In summary, the findings of the previous researchers and the findings of the present researcher are very dissimilar with the exception that both failed to reveal any explained variance in somatic complaints.

Higher-Order Interactions

Consistent with the procedure of Ganster et al. (1986), three-way interactions were

examined on the basis of blue versus white collar, less than high school education versus high school or more education, and males versus females--all in combination with job stressors and social support. Interest in the present study is whether the buffering effect of social support differs for males and females. The higher power regressions performed previously were used to evaluate these distinctions. Ganster et al. (1986) failed to find any significant 3-way interactions. Only one significant 3-way interaction was found in the present study. Some of the variance in life satisfaction was explained by the interaction of role conflict X supervisor support X blue-white collar ($F=6.58$; $df=1,173$; $p<.05$). Table 6 and Figures 3 and 4 illustrate the interaction.

Referring to Figures 3 and 4, one is able t clearly see the different supervisor social support buffering process operating for white versus blue collar subjects. White collar subjects exhibit buffering i the theorized direction. For this group, the adverse relationship between life satisfaction and role conflict is weakened by high levels of supervisor social support. For the blue collar subjects, the opposite is true. Reverse social support buffering is occurring. High levels of supervisor social support strengthen the adverse relationship between role conflict and life satisfaction. When role conflict is high, blue collar subjects report greater satisfaction with life when supervisor social support is low versus when it is high. Overall, however, the effects of social support are far less pronounced for blue collar subjects than they are for the white collar group.

DISCUSSION

The present study was a partial replication of Ganster et al.'s (1986) study. The study looked at the main effects of stressor and social supports on strains. Moderating effects of

social support were also examined for potential support of the "buffering hypothesis." In addition, three-way interactions were examined to see whether other variables would help to explain why social support seems to buffer in some situations but no in others. A primary interest of the sub-sample analyses was to uncover male-female differences not revealed in the work of Ganster et al. (1986).

Main Effects

In terms of the stressors outlined in the present study, namely life stress, role conflict, role ambiguity, quantitative workload, skill utilization, work variability, and responsibility, 34% of the variance in strains was accounted for. This result is much stronger than Ganster et al.'s (1986) finding which was 13%. This then provides even more support for a main effect of the negative conditions outlined above on the strains or outcome variables namely, job satisfaction, life satisfaction, somatic complaints and depression.

In terms of the social support received from supervisors, coworkers and friends/family, 24% of the variance in the outcome measures was explained by these sources of support. This result is again much stronger than that of Ganster et al. (1986), who found only 6% of the variance in the outcomes could be explained.

Why might these findings be stronger than Ganster et al.'s (1986)? First, in the previous research, job satisfaction was measured with one item, a sexless form of the "faces" scale (Kunin, 1955), whereas in the present study, this item was used in conjunction with an additional 17 items (Hackman and Oldham, 1980; Caplan et al., 1975). This permits more variance in responses, as people may be satisfied with some parts of the job than with others, and it probably also increases the reliability of this outcome measure. Second, Ganster et al.

(1986) temporarily separated the questionnaire administration. Items measuring stressors and social supports were administered first and then outcome items were administered several days later. The present research presented subjects with all items at one time, therefore, there may have been a stronger psychological connection between "causes" and "effects" or more correlated method bias between them. Third, the present study also added another variable to the list of stressors examined. Life stress was added and may have strengthened the relationship between the stressors and strains. There were significant correlations between life stress and life satisfaction, job satisfaction and somatic complaints.

Moderating Effects

The overall omnibus regression results provided no support for the buffering or moderating effects of social support in the stressor-strain relationship. However, the higher power option (a more limited omnibus regression in which each strain was regressed on one stressor, all social support sources and then the applicable interaction terms), however, did support the buffering hypothesis. Variance in job satisfaction can be explained in part by the interaction of role conflict and support from coworkers. Variance in depression can also be partially explained by role conflict and coworker social support.

The risk of Type I error would be somewhat less if these results had replicated Ganster et al.'s (1986) findings regarding specific stressors, strains, and social supports. Ganster et al.'s findings, however, were completely dissimilar to the present findings. The previous researchers were able to explain the variance in outcome variables through the interaction of stressors and social supports in at least three different regressions, most were examples of reverse buffering. The previous researchers found one instance of buffering in

the theorized direction for job dissatisfaction. They found that people who lack variability in their work were more satisfied with their jobs when they also had high support from family and friends.

What then, may have caused such disparate results from one study to another using a similar instrument to assess similar variables? Although the statistical analyses were carried out in the same manner, the subjects as well as the collection of the data differed. In terms of the subjects, Ganster et al.'s were private sector employees with an average age of 32.5 years. The present study's subjects were older (average age of 40.6 years) public sector employees. Also, Ganster et al.'s (1986) sample was 84% males, whereas the present sample was 63% males. In terms of the data collection, the previous researchers administered the questionnaire in two parts to groups of subjects during working hours, while the present study mailed the entire questionnaire to the subjects homes. Although these differences do not seem severe, they may have had some unknown effect. In any case, the interaction or moderator results of the present study have virtually no specific similarities with the results of the previous study.

Of particular curiosity is the most outstanding difference, namely that social support buffers in reverse for Ganster et al.'s (1986) subjects, and in the theorized direction for the present subjects. Kaufmann and Beehr (1986) offer three possible explanations for the reverse buffering phenomenon. First, it might make a difference if the source of support is also the source of stress. A coworker who often creates stress for an employee may trigger a stress response even when attempting to provide support. Second, supportive communications between employees may reinforce the perception of a bad situation as being

even worse. In this instance, the content of the communication between the stressed employee and the supportive employee make a difference. Third, since a great deal of research in this arena is correlational in nature it is difficult to determine the direction of causality, if any. Rather than interpreting social support as aggravating the effects of stressors on strains, for example, perhaps the stressor led to the strain, which in turn prompted the individual to seek social support. Unfortunately, it is impossible to determine if any of these conditions existed in either the present or the previous study.

Moderating Effects for Sub-Samples

Only one 3-way interaction was significant. Ganster et al. (1986) posed three questions in their discussion following the lack of evidence for 3-way interactions in an effort to explain why they believe higher order interactions are not necessary to shed light on social support buffering:

1. Is the buffering effect specific with regarding to particular stressors, strains, and sources of social support?
2. Is the effect general across different stressors, sources of support and strains for some population groups but no others?
3. Is the effect specific to particular stressors, sources of support and strains in certain population groups and specific to different stressors, sources of support, and strains in other groups?

In terms of question one, Ganster et al. (1986) answer by stating that there is no obvious theoretical basis for expecting social support to act as a moderator in some stressor-strain relationships and not in others. Further, they state that even though significant

moderator effects have been found for some groups of variables this does not necessarily mean that these effects differ from the nonsignificant effects uncovered for other variable combinations.

Regarding the second and third questions above, Ganster et al. (1986) rely heavily on the lack of 3-way interactions to answer with a definitive "no." Ganster et al. (1986) do note, however, that significant 3-way interactions are difficult to come by. One 3-way interaction was found in the present study which leads the present researcher to say the answer must at least be "maybe" rather than "no." In particular, collar-color appears to have some ability to determine whether social support buffers stressor-strain relations. In summary, finding only one 3-way interaction discourages belief in strong, pervasive differences between the sub-samples.

Limitations

One potential limitation of the present study is the sample size. A larger sample size may have enabled the present researcher to uncover more information about the sample and would have increased the ability to generalize the findings. A 38% response rate is reasonable for mailed questionnaires, however.

The municipality's EAP address was used as the return address for the questionnaires. If the address had been the researchers' university, the subjects may have been less suspicious of the use of the data and more likely to return a completed instrument. The use of a code number on the questionnaires may have also decreased the response rate. Although the reason for the code numbers was logical, namely that missing biographical data could be obtained from the Personnel Department files, in reality people could not be guaranteed

anonymity. This fact was probably disturbing to some and hence, discouraged them from responding. A few individuals did respond anonymously by cutting off or otherwise obliterating the code number.

Since it is impossible to determine why those who responded did so, one is left to speculate on the composition of the group of responders. It may be, even though there is no obvious reason to think so, that the sample consists mainly of those who have a great respect for the positive effects of research or a great respect for the EAP and its function, or perhaps those who wanted to take advantage of a chance to complain about their working conditions. This of course, cannot be known, but the respondents are probably likely to be similar to those of past studies that used similar methods.

Conclusions

Keeping in mind that the study has limitations, the conclusions that follow are to be interpreted with some caution. First, from the analyses performed to assess main effects, stressors and social support explain, in part, why people are satisfied with their jobs, satisfied with life, complain about certain physiological conditions, and are depressed. Basically, job stressors can have negative outcomes for people and social support can have positive outcomes for people.

Second, social support does moderate some of the effects of stress in this sample of municipal employees. Overall, it appears that when role conflict is high, coworker support is important in employees' perceptions of job satisfaction and depression.

Third, while sex and education level do not seem to combine interactively with social support and job stressors to predict employees' strains, collar color might do so in predicting

employees' life satisfaction. Specifically, there might be reverse buffering among blue collar workers and "normal" buffering among white collar workers.

A first step in future examinations of the optic of work stress and social support may be further development of theory. While there was a rationale for the three high order moderator variables (collar color, sex, and education), they are also obviously very easy variables to measure. Perhaps a stronger theoretical argument could be made to predict higher order interactions with more complex, more psychological variables.

Future research in this area may also benefit from examining not only the sources of social support but the content of that support. this may aid in explaining why some relationships are reverse buffering and some are not. The ultimate solution to the problem of differing findings across studies may be for some courageous individuals to embark upon an empirical journey into a meta-analysis. This would determine if any of these diverse findings can be drawn together and generalized.

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Table 1. Means, Standard Deviations, Correlations and Reliabilities for Stressors, Social Supports and Strains

Variable	$\bar{X}$	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Life Stress	11.93	12.99	(.90)													
Role Conflict	3.59	1.43	.07	(.86)												
Role Ambiguity	2.78	1.28	.06	.52*	(.85)											
Quant. Workload	8.32	.66	.13	.33*	.18*	(.77)										
Work Variability	3.09	.89	.03	.30*	.13	.65*	(.79)									
Skill Utilization	3.05	1.24	-.01	-.07	-.20*	.37*	.26*	(.84)								
Responsibility	2.68	1.25	.09	.09	-.10	-.00	.23*	.13	(.83)							
Supervisor S.S.	3.61	.95	-.02	-.43*	-.55*	-.26*	-.17*	.19*	.21*	(.90)						
Coworker S.S.	3.63	.74	-.01	-.12	-.17*	.05	-.13	.30*	-.10	.12	(.75)					
Other S. S.	4.36	.72	-.03	-.04	-.03	-.00	-.03	.13	.05	.01	.16*	(.74)				
Life Satisfaction	2.96	.51	-.31*	-.36*	-.38*	-.17*	-.09	.12	.09	.29*	.05	.44*	(.77)			
Job Satisfaction	4.96	1.09	-.23*	-.53*	-.71*	-.20*	-.13	.37*	.17*	.69*	.29*	.09	-.46*	(.91)		
Somatic Complaints	1.06	.49	.26*	.20*	.14	.16*	.17*	-.03	.02	-.07	.06	-.09	-.37*	-.23*	(.88)	
Depression	1.81	.51	.20	.48*	.53*	.16*	.19*	-.25*	-.05*	-.33*	-.26*	-.23*	-.52*	-.54*	.48*	(.84)

Note: ( ) Coefficient α; N = 181; * Significant @p < .05 two-tailed

Table 2. Canonical Analysis of Stressors and Strains

	Canonical Coefficients	
Variable	Variate 1	Variate 2
STRAINS		
Life Satisfaction	-.04	-.71
Job Satisfaction	-.82	.18
Somatic Complaints	-.07	.81
Depression	.28	-.58
Redundancy	.31	.03
TOTAL REDUNDANCY	.34	
STRESSORS		
Role Conflict	.26	.42
Role Ambiguity	.63	-.48
Quantitative Workload	.16	.28
Work Variability	.04	-.12
Skill Utilization	-.36	.18
Responsibility	-.12	-.12
Life Stress	.01	.85
Work-related Life Stress*	.15	.02

Note: * This variable is composed of the work-related items from the Sarason et al. (1978) instrument.

Table 3. Canonical Analysis of Social Supports and Strains

	Canonical Coefficients	
Variable	Variate 1	Variate 2
STRAINS		
Life Satisfaction	-.05	1.14
Job Satisfaction	1.01	-.49
Somatic Complaints	.12	.19
Depression	-.06	-.10
Redundancy	.19	.05
TOTAL REDUNDANCY	.24	
SOCIAL SUPPORT		
Supervisor Social Support	.91	.03
Coworker Social Support	.30	-.32
Other Social Support	.05	1.00

Table 4. Stressor X Coworker Social Support Interactions for Total Sample, Predicting Depression

	Values at Step Two		
Step/Variable	B	T	Sign. T
1/Role Conflict	.31	1.89	.0608
1/Coworker Support	.15	1.61	.1097
2/Role Conflict X Coworker Support	-.08	-3.13	.0020
Constant (Intercept)	2.17	3.25	.0014
Total R squared = .33	---	3.47	.0000
Change in R squared = .07	---	2.38	< .05

Table 5. Stressor X Coworker Social Support Interactions for Total Sample, Predicting Job Satisfaction

	Values at Step Two		
Step/Variable	B	T	Sign. T
1/Role Conflict	-.53	-1.98	.0496
1/Coworker Support	-.01	-.07	.9416
2/Role Conflict X Coworker Support	.08	1.99	.0486
Constant (Intercept)	3.20	2.94	.0037
Total R squared = .60	----	6.13	.0000
Change in R squared = .03	----	1.89	< .05

Table 6. Stressor X Social Support X Blue/White Interaction, Life Satisfaction

	Values at Step Three		
Step/Variable Entered	B	T	Sign. T
1/Blue/White Collar	1.05	1.46	.1461
1/Role Conflict	.43	1.72	.0869
1/Supervisor Support	.60	2.17	.0314
2/Role Conflict X Supervisor Support	-.17	-2.55	.0118
2/Role Conflict X Blue/White Collar	-.36	-2.18	.0305
2/Supervisor Support X Blue/White Collar	-.34	-1.85	.0666
3/3-way Interaction (Blue/White Collar X Role Conflict X Supervisor Support)	.12	2.57	.0111
Constant (Intercept)	1.37	1.24	.2160
Total R squared = .19	---	2.44	.0000
Change in R squared = .03	---	2.57	< .05

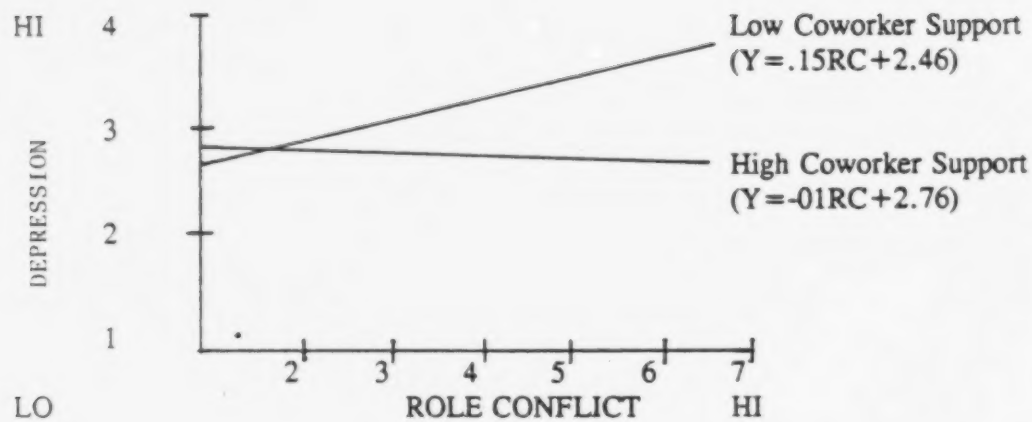

Figure 1. Role Conflict X Coworker Support Interaction Predicting Depression Among Total Sample.

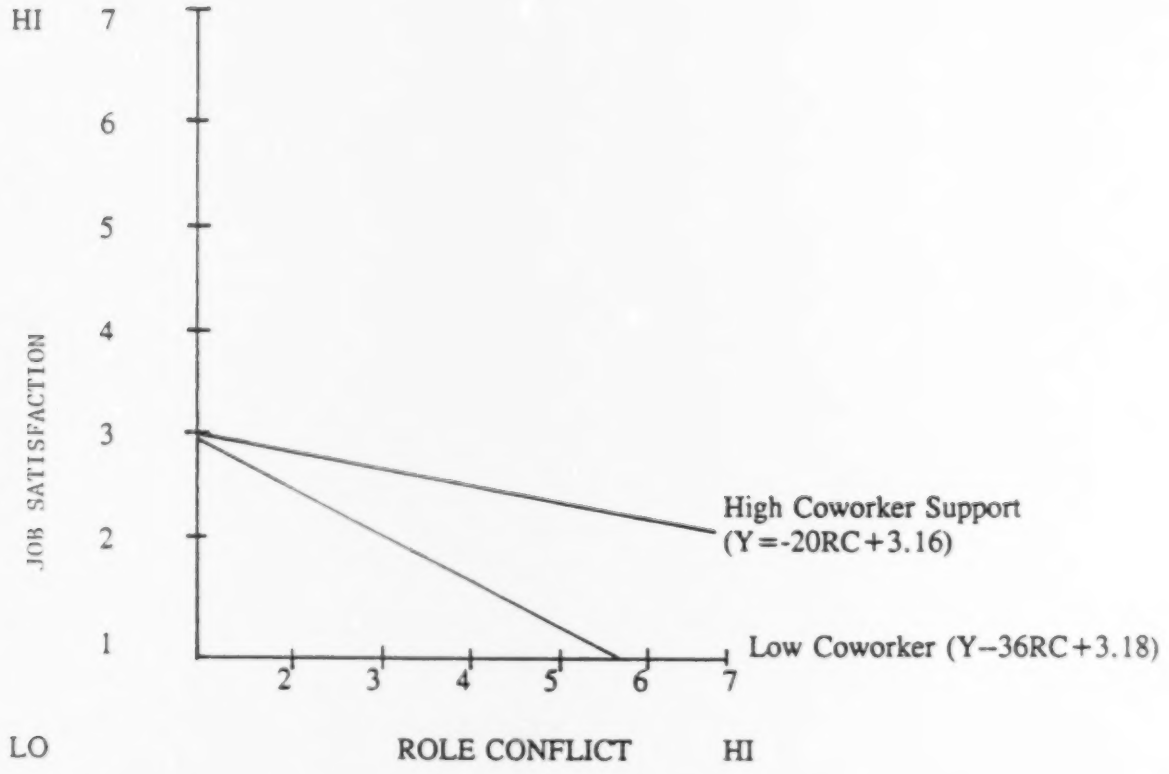

Figure 2. Role Conflict X Coworker Support Interaction Predicting Job Satisfaction Among Total Sample.

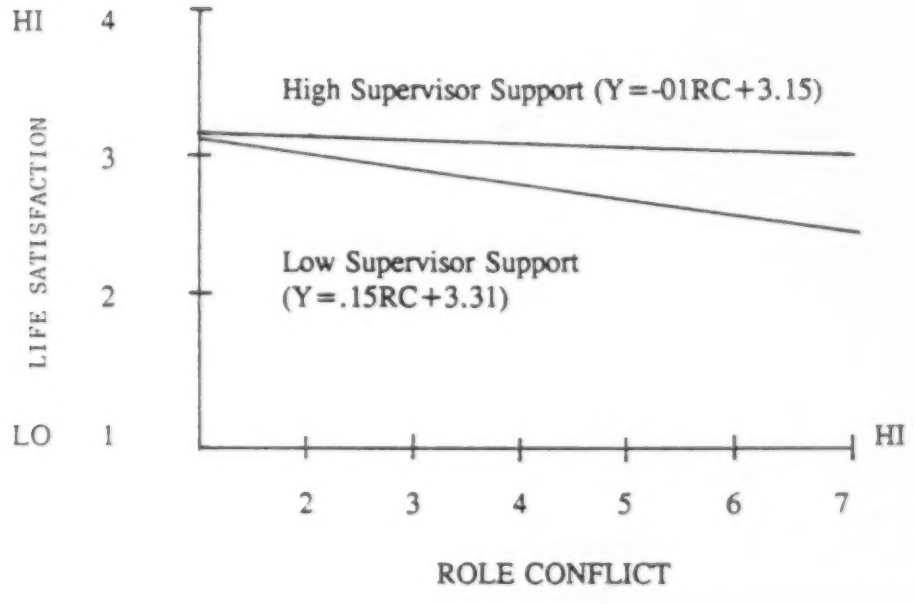

Figure 3. Role Conflict X Supervisor Support Interaction Predicting Life Satisfaction Among White Collar Workers.

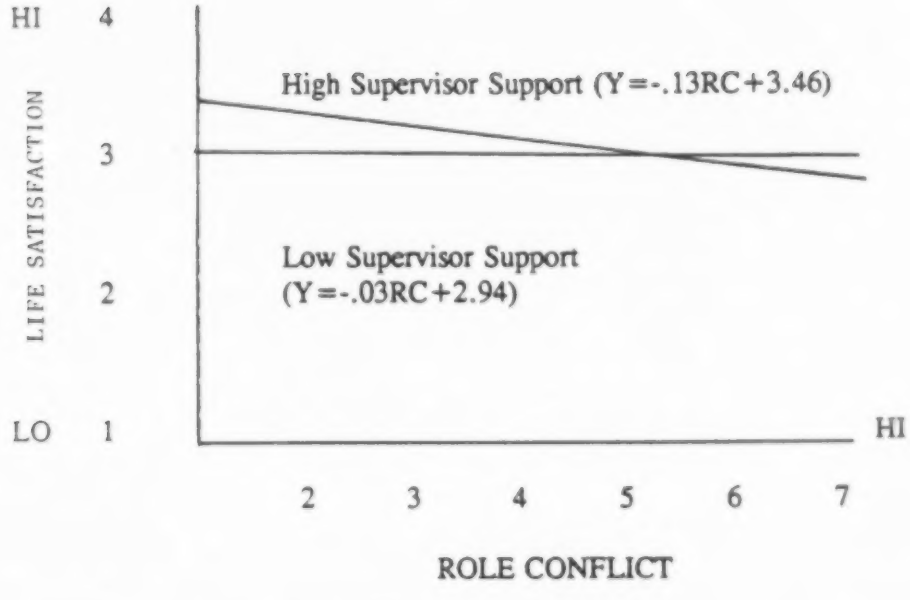

Figure 4. Role Conflict X Supervisor Support Interaction Predicting Life Satisfaction Among Blue Collar Workers.